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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,134	12/18/2001	Bijit Halder	56162.000358	9579

7590 06/29/2004  
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EXAMINER

HAROLD, JEFFEREY F

ART UNIT PAPER NUMBER

2644

DATE MAILED: 06/29/2004

*[Handwritten mark]*

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/020,134

Applicant(s)

HALDER ET AL.

Examiner

Jefferey F Harold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-11,13-15,20-23,30-36,41 and 42 is/are rejected.
- 7) ☒ Claim(s) 3-8,12,16-19,24-29,37-40 and 43-50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Information Disclosure Statement*

1. The references listed in the Information Disclosure Statement submitted on May 24, 2002 have been considered by the examiner (see attached PTO-1449).

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. ***Claims 1, 2, 9-11, 13-15, 20-23, 30-36, 41 and 42*** are rejected under 35

U.S.C. 102(e) as being anticipated by Lin (United States Patent 6,590,976).

Regarding **claim 1**, Lin discloses a two-step algorithm for training an echo cancellation filter. In addition, Lin discloses a dual rate echo canceller for application with asymmetric transmit and receive rates, the echo canceller comprising: an echo cancellation filter having an input adapted to receive a transmit signal from a transmit path at an input, the echo canceller filter being adapted to generate an output signal comprising a signal component representative of an echo signal associated with the transmit signal at an output, wherein the input and the output of the echo canceller filter are sampled at a transmit rate; a first rate matching block having an input adapted to

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receive the echo cancellation filter output signal, the first rate matching block being adapted to generate a first output, the first output being subtracted from an incoming receive signal yielding a residue echo signal at a receive rate; and a second rate matching block having an input adapted to receive to the residue echo signal, the second rate matching block being adapted to generate an error signal at the transmit rate, as disclosed at column 4, line 1 through column 5, line 9 and exhibited in figures 3-6.

Regarding **claim 2**, Lin discloses everything claimed as described above (see claim 1), in addition, Lin discloses wherein the receive rate is greater than the transmit rate, as exhibited in figures 3-5.

Regarding **claim 9**, Lin discloses everything claimed as described above (see claim 1), in addition, Lin discloses wherein the error signal is used to adaptively train at least one coefficient of the echo canceller filter, as disclosed at column 7, lines 13-47 and exhibited in figure 7.

Regarding **claim 10**, Lin discloses everything claimed as disclosed above (see claim 9), in addition, Lin discloses wherein least mean square update rules are used to adaptively train at least on coefficient of the echo canceller filter, as disclosed at column 7, lines 49-64.

Regarding **claim 11**, Lin discloses everything claimed as described above (see claim 1), in addition Lin discloses wherein the receive rate is equal to a multiple of a transmit rate by a rate factor, as exhibited in figures 3-9.

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Regarding **claim 13-15, 20-23, 30-36, 41 and 42** Lin discloses everything claimed. In addition, claim 13-15, 20-23, 30-36, 41 and 42 are interpreted and thus rejected for the reasons set forth above in the rejection of claims 1, 2, and 9-11.

***Allowable Subject Matter***

3. **Claims 3-8, 12, 16-19, 24-29, 37-40 and 43-50** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferey F Harold whose telephone number is 703-306-5836. The examiner can normally be reached on Monday - Friday 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JFH  
June 10, 2004

Jefferey F Harold  
Examiner  
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